Senior 1 Mathematics
Standards Test

Administration Manual for Supervising Teachers

June 2003

Manitoba
Education
and Youth

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Manitoba Education and Youth,
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Preface

This *Administration Manual for Supervising Teachers* is distributed to teachers and administrators, and must be read prior to administering the standards test. The rules and guidelines in this manual must be strictly observed to ensure the consistency of standards test administration.

Please use this manual in conjunction with the registration package, the *Policies and Procedures for Standards Tests* handbook and the *Information Bulletin* to gain a full understanding of the protocols and procedures associated with this test. This manual contains general information about the test, step-by-step instructions for the test administration, and policies regarding absenteeism, lateness, violation of rules, etc.

If you encounter exceptional circumstances not addressed in this manual, or if you have further inquiries, contact Chantal Lambert, Administrative Officer, at 945-7620, or toll-free at 1 800 282-8069, extension 7620.

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General Information

Manitoba Education and Youth develops all standards tests in collaboration with teachers from across the province. This standards test is based on the *Senior 1 Mathematics: Manitoba Curriculum Framework of Outcomes and Senior 1 Standards (1997)* and *Senior 1 Mathematics: A Foundation for Implementation (1997).*

The Senior 1 Mathematics Standards Test will be administered as an optional test at the discretion of the local jurisdiction. Once the decision is made to administer the test, schools are to follow the test administration procedures set out by the department.

The standards test is locally marked. Participating school divisions/districts and independent schools will determine the percentage of the mark on the standards test to be counted toward the student's final mark to a maximum of 25% of the student's final mark. Marking instructions are provided by the department immediately following test administration. School principals will receive Senior 1 Mathematics Standards Test *Marking Guides* no later than June 12, 2003. The *Marking Guides* are to be stored in a secure location until 12:30 p.m. the day of the test. Student results on the test will be released to students according to local policy on the date designated by local jurisdictions.

Students are expected to write the standards test as scheduled near the end of the semester in which they take the course (e.g., January for first-semester courses, June for second-semester and full-year courses).

All schools should receive the test materials by June 2, 2003. Principals of public schools receive test materials from their division/district offices. Principals of independent and band-operated schools will receive test materials directly from the Assessment and Evaluation Branch.

The number of test booklets sent to each school is based on the February 21, 2003, registration information provided by the school. Please advise Chantal Lambert, Administrative Officer, at 945-7620, or toll-free at 1 800 282-8069, extension 7620, immediately if the number of students registered to write the test has increased since registration.

In the context of marking standards tests at the local level, Manitoba Education and Youth will:

- train representatives from local jurisdictions to act as local marking co-ordinators;
- collect and scan all *Answer/Scoring Sheets* from jurisdictions to provide them with test result summaries;
- centrally mark a random sample of locally-marked test booklets to provide feedback to jurisdictions on their local marking; and
- support provincially-funded local jurisdictions by providing $10.00 for each locally-marked test administered in accordance with the test schedule noted on the following page.

Features of the test

As a result of changes to the Senior 1 Mathematics curriculum which took effect in September 2001, the length and format of the standards test is as follows:

- the test will be administered in one session of **2 hours** with an additional 30 minutes if requested by the student and at the discretion of the classroom teacher; and
- the two curricular choices, Choice I and Choice II, **will be contained in the same test booklet**.

The remaining features of the test are unchanged:

- the test will contain both selected-response and constructed-response items;
- among the constructed-response items, the test will include "open-response" items which will be scored according to the Standards-Based General Scoring Rubrics (4-mark and 6-mark) found in Appendix A of the *Information Bulletin*; and
- English or French versions of the test will be available for students enrolled in Senior 1 Mathematics and "Mathématiques de secondaire 1".

Schools/classes choosing to cover all units from both choices are to select either Choice I or Choice II with the remaining unit to be assessed locally.

Test schedule

The following table summarizes the schedule for the Senior 1 Mathematics Standards Test:

Date	Preparation Time	Time Required for Test
Wednesday, June 11, 2003	15 minutes preparation and instructions	2 hours + 30 minutes (optional)

The test must be written between 8:30 a.m. and 12:30 p.m. on Wednesday, June 11, 2003.

The total writing time is 120 minutes plus 15 minutes for preparation and instructions. Additional writing time of 30 minutes is permissible if needed.

Policies for Standards Tests

Principals and supervising teachers should be aware that *Policies and Procedures for Standards Tests* handbook has been distributed to all schools and is available on-line at http://www.edu.gov.mb.ca/ks4/assess/publications.html. This handbook outlines current policies and procedures related to the administration of standards tests and reflects the principles and guidelines contained in *Principles for Fair Student Assessment Practices for Education in Canada (1993).*

Adaptations

Schools are asked to identify and submit requests for test adaptations **at the time of student registration**. These requests should be submitted on the *Request for Adaptations Form* included with the registration package. Following departmental review of the adaptation requests received, schools will be advised of the department's decision regarding these requests (see *Policies and Procedures for Standards Tests*, Sections 4.0, 4.1 and 4.2).

Exemptions

Decisions for student exemptions that fall within the guidelines set out in *Policies and Procedures for Standards Tests* (Sections 5.0, 5.1 and 5.2) are made at the school level and do not require departmental approval. Schools are required, however, to report school-based exemptions on the *Student Exemption Report* included with the registration package. If additional student exemptions are needed after the registration deadline date, an additional *Student Exemption Report* should be submitted as soon as possible.

For exemptions that fall outside the parameters of policy and procedure guidelines, requests should be made **at the time of student registration**. Please submit requests in writing to Ernest Molgat, Director, Assessment and Evaluation Branch, 71–1567 Dublin Avenue, Winnipeg MB R3E 3J5.

Re-read provisions

As the reporting of individual student scores on locally marked standards tests is the responsibility of each local jurisdiction, the re-read policy for these tests is determined locally. Should a re-read be required for a test booklet that has been sent to the department as a part of the feedback marking process, the department will return a photocopy of the test booklet upon request. Please contact Chantal Lambert, Administrative Officer, at 945-7620, or toll-free at 1 800 282-8069, extension 7620.

Return of tests to students

Local jurisdictions decide whether to keep the test booklets or return them to students. The department will return the random sample of test booklets to schools within three months of marking.

Test confidentiality

Test materials must be kept secure and sealed until administration.

Test booklets must not be reproduced nor information from them communicated in any way until test administration is completed.

The *Marking Guides* are to be stored in a secure location until the test administration is complete.

Student materials

Students may use the following materials during the Senior 1 Mathematics Standards Test:

- scientific or graphing calculators;
- HB pencils;
- manipulative materials;
- geometry sets;
- rulers; and
- erasers.

Students are not permitted to exchange materials during the test.

The following materials must **not** be used during the test:

- class notes;
- notebooks;
- school text books; and
- electronic devices (i.e., computers, dictionaries, translation devices, etc.) with the exception of calculators.

Students leaving the room

Students are expected to remain in the room for a minimum of 60 minutes from the start of the test.

However, any student who must leave and re-enter the room should be accompanied by a replacement supervisor. This practice ensures that the supervising teacher can remain in the test room with the students at all times.

Late arrivals

To avoid the opportunity for student discussion of test questions during the administration of the test, students may not enter the test room after the first hour of writing.

Students who arrive late, but within the first hour of the test, may be allowed additional time corresponding to the amount by which the student was late, at the discretion of the principal.

Student absences

Students who are absent for the Senior 1 Mathematics Standards Test will not be given another time to write the test. Schools have the responsibility to provide a final mark to absent students.

Responding to student questions

Avoid making any directing/guiding comments during the test, other than those required for distribution of materials and instructions to students.

No explanations, translations, rephrasing, clarifying statements or comments of a similar nature may be provided about the test content unless otherwise specified. Classroom teachers can, however, provide clarification regarding test-taking rules or procedures.

If a student asks a question related to test content, a suggested response is, "I'm sorry. I can't answer your question. Do your best with it."

Suspected errors in printing or wording should not be communicated to students unless specific instructions are received from the Assessment and Evaluation Branch. You may however, contact Ken Horton, Assessment Consultant, at 945-2576, or toll-free at 1 800 282-8069, extension 2576 to report any suspected errors.

Violation of rules

The *Test-Taking Rules* are read aloud to students by the supervising teacher immediately before the test (see Appendix 1, page 17).

Document any violation of rules on the *Supervising Teacher Report*. This documentation should include:

- the test booklet number; and
- a description of the circumstances, including available evidence.

The student may be permitted to complete the test.

The consequences of any violation of rules is a local decision.

Damaged or misprinted material

Students should be assured that they will not be penalized for any obvious error in printing or wording. Local marking co-ordinators will be advised of any known errors before the marking session. Return the unused damaged booklet(s) with the reports and forms being sent to the department immediately after the test session.

On test administration date

If a damaged or misprinted test booklet is discovered **at the start** of the test session:

- replace the damaged or misprinted test booklet with a new test booklet; and
- print "DAMAGED" on the test booklet cover and on the *Attendance Form*.

During test administration

If a damaged or misprinted test booklet is discovered **during** the writing of the test:

- give the student a new test booklet (the student keeps the damaged test booklet until the end of the session);
- instruct the student to continue responding to test items in the new test booklet;
- collect both test booklets at the end of the test session;
- cross out the existing booklet number on the undamaged test booklet and change it to the original booklet number so that **all student responses are recorded under the original booklet number**;
- indicate on the *Attendance Form* that two booklets have been used for one student (see Appendix 5, page 21);
- record the damaged or misprinted test booklet number on the *Supervising Teacher Report*; and
- ensure both booklets are kept together by bundling with an elastic band.

Responsibilities of School Principals

It is the responsibility of the principals to ensure that the tests are kept confidential until test administration is completed.

Other responsibilities are listed below.

If tests are not in your school by June 2, 2003:

- public school principals should contact their superintendent;

- principals of independent and band-operated schools should contact Chantal Lambert, Administrative Officer, at 945-7620, or toll-free at 1 800 282-8069, extension 7620.

Use the *Packing List* to confirm that all materials have been received. Count the shrink-wrapped test booklets to ensure that there are enough booklets for the number of students writing the test. Keep the shrink-wrapped test packages unopened until the morning of the test. If additional test materials are needed, immediately contact Chantal Lambert, at the number noted above.

Store test materials in a secure area in the school.

Provide supervising teachers with a listing of the Manitoba Education and Youth (MET) numbers for the students registered to write the test. Call the Professional Certification and Student Records Unit at 1 800 667-2378 to obtain MET numbers for new students.

Make arrangements to meet the requirements of the adaptations approved for your students (see Adaptations, page 3 and *Policies and Procedures for Standards Tests*, Sections 4.0, 4.1 and 4.2).

Co-ordinate test scheduling and space requirements.

Minimize the frequency of school announcements during the test session.

Ensure that a replacement supervisor is available to accompany students who must temporarily leave the room.

Provide the test materials to the supervising teacher on the morning of the test.

Complete the *Principal Feedback Form* before the end of the test session.

Advise the Assessment and Evaluation Branch of school closures or suspended school bus transportation services that occur on the test date as a result of unusual or extenuating circumstances or inclement weather conditions. Please contact Ken Horton, Assessment Consultant, at 945-2576 or toll-free at 1 800 282-8069, extension 2576.

Responsibilities of Supervising Teachers

Supervising teachers administer the test using the step-by-step procedures outlined in the following section ("Checklist of Procedures") in this manual.

Points to Remember

- Remain in the classroom throughout the entire test session and engage in work solely related to the duties of supervising the test.
- A replacement supervisor must be available to assist you.
- Store all documents not in use in a secure area in the school.
- Ensure that once a booklet number has been assigned to a student, all materials distributed to that student have the same booklet number.
- Students may **not** bring anything produced outside of class into the test session.

Checklist of procedures

(✓)	**Advance preparations**
	1. Check with your principal to ensure that:
	– appropriate scheduling and space allocation for the test has occurred.
	– the test materials itemized on the *Packing List* have been inventoried.
	– a replacement supervisor is available to accompany students who must temporarily leave the room during the test.
	– arrangements have been made to accommodate the adaptations approved for students.
	– a list of MET numbers for students writing the test is available.
	2. Ensure that all subject-related materials have been removed from the walls and boards.
	3. Notify students in advance of the:
	– time, location and duration of the test session.
	– materials needed to write the test.
	– *Test-Taking Rules* (see Appendix 1, page 17).
	– list of *Directing Words Used in the Test* (see Appendix 2, page 18).
	– requirement to remain in the test session for at least 60 minutes.
	4. Ensure that you have extra supplies, blank 8½ × 11 sheets of paper for those who require extra paper during the test, and that there is a functioning pencil sharpener and stapler in the room. Students must not exchange materials during the test.
	5. If there is more than one teacher supervising the test, photocopy the *Supervising Teacher Report* and *Supervising Teacher Feedback Form*.
	6. Review the sample forms in the Appendices.
(✓)	**Prior to test session**
	1. Ensure that your materials are available:
	– *Packing List*
	– *Student Response Booklets*
	– *Attendance Forms* (enclosed with shrink-wrapped test booklets)
	– extra copies of test booklets (four extras + teacher copy)
	– *Demographic Data Forms*
	– *Answer/Scoring Sheets*

	– *Supervising Teacher Report*
	– *Supervising Teacher Feedback Form*
	– *Principal Feedback Form* (this must be given to the principal and collected before returning materials)
	– *Administration Manual for Supervising Teachers* (this document)
	– Xpresspost Flexipack envelope (for schools outside the city of Winnipeg) for return of materials to the Assessment and Evaluation Branch
	2. Count the number of *Student Response Booklets*. The number of test booklets should equal the number requested by the school plus the additional booklets. The number of booklets should also be identical to the number on the *Packing List*. If you need to split a bundle of booklets between classrooms, make a photocopy of the *Attendance Form* enclosed with the bundle. **On your copy**, cross out the test booklet numbers that are not used in your classroom and forward these booklets to the supervising teacher who requires them.
	3. Arrange the desks so they are spaced as far apart as possible.
	4. Remove the following from the envelope labelled "Demographic Data Forms":
	– pre-printed *Demographic Data Forms* in alphabetical order for every student registered to write the Senior 1 Mathematics Standards Test as of February 21, 2003 (see Appendix 3, page 19). Ensure that the school name, school code and provincial student number appearing on the pre-printed forms are accurate; and
	– generic *Demographic Data Forms* to provide information for students who transferred to the classroom after the February 21, 2003, registration deadline, and who are scheduled to write the test (see Appendix 4, page 20). **Note:** Only **one** *Demographic Data Form* should be completed for each student. If a pre-printed *Demographic Data Form* exists for a student, that is the form that should be used. **DO NOT** complete a generic *Demographic Data Form* for that student.
	5. Ensure that students exempted from writing the test are not present.
(✓)	**Beginning the test session**
	1. Distribute:
	– *Student Response Booklets*
	– *Answer/Scoring Sheets* (double-sided)
	– *Demographic Data Forms*
	2. Tell students that while they are working you will be circulating the *Attendance Form* so they can print their names beside their test booklet number.
	3. Remind students to check that the booklet number on the *Answer/Scoring Sheet* corresponds with the number on the *Student Response Booklet*.

	4. Read aloud the instructions for completing the *Demographic Data Forms*. The instructions are found in the inside front cover of the test booklets and on the form itself. Direct students to print and shade in the information requested on the *Demographic Data Form*.
	5. Collect the *Demographic Data Forms*.
	6. Read aloud the *Test-Taking Rules* to students (Appendix 1, page 17).
	7. Read aloud the *Points to Remember* to students (page *iii* in the test booklet).
	8. Remind students to:
	– pace themselves in writing the test.
	– use the *Answer/Scoring Sheet* for responding to selected-response questions.
	– check over their work to ensure that all questions have been attempted.
	9. Tell students to complete common items and Choice I ***OR*** common items and Choice II. Direct them to use the appropriate side of the *Answer/Scoring Sheet*. Students must not make marks on the side they are **not** using as this affects the scannability of the form.
	10. **Instruct students to turn the page and begin. Record the start time on the *Supervising Teacher Report*.**
(✓)	**During the test session**
	1. Supervise the completion of the *Attendance Form* by ensuring that students print their name beside their test booklet number. Ensure that each student has recorded the correct test booklet number by verifying that the test booklet number corresponds with the student name recorded on the *Attendance Form* (see sample *Attendance Form*, Appendix 5, page 21). **Note:** This is the only record connecting students' identities to their *Student Response Booklet*.
	2. Verify that all the information on each *Demographic Data Form* is accurately printed and shaded. – If the information provided on the pre-printed *Demographic Data Form* is inaccurate, cross it out and write in the correct information (school name, school code and provincial student number); – If the information on the generic *Demographic Data Form* is inaccurate, erase the error and record the correct information. Place all used forms in numerical order followed by any unused forms in the labelled envelope provided. Do not use elastic bands, staples or paper clips on these forms as they may damage the sheets. Do not seal the envelope.
	3. Half-way through the test session, advise students of the amount of time remaining by writing the remaining time on a board.

(✓)	Ending the test session
	1. Have students place their *Answer/Scoring Sheet* inside the front cover of the test booklet. Collect test booklets from each student.
	2. As students submit their test materials, ensure that each test booklet number matches the information on the *Answer/Scoring Sheet*, the *Attendance Form* and the *Demographic Data Form* (e.g., cross-reference student name and test booklet number). Each student must have the same booklet number on all test materials.
	3. Place a check "✓" on the *Attendance Form* in the "Booklet Submitted for Marking" column, indicating either Choice I **or** Choice II for students who wrote the test.
	4. Record **the time students finish writing the test on the *Supervising Teacher Report***. Do not include extra time given for late arrivals or adaptations.
	5. Stack the test booklets in numerical order.
	6. If marking is conducted at the school, leave the *Answer/Scoring Sheets* inside the front cover of each booklet. After marking, place all used *Answer/Scoring Sheets* in numerical order followed by any unused forms. Place these forms in the labelled envelope provided. Do not seal the envelope.
	7. If marking is to be conducted at a central location, place all used *Answer/Scoring Sheets* in numerical order followed by any unused forms. Place these forms in the labelled envelope provided. Do not seal the envelope.
	8. Complete the *Supervising Teacher Report*. Note any unusual circumstances on this report.
	9. Ensure that the number of check marks in the "Booklet Submitted for Marking" column on the *Attendance Forms* matches your count of the booklets and *Answer/Scoring Sheets* for submission.
	10. Make two copies of the *Attendance Forms* and *Supervising Teacher Report*. One copy must be retained by the school and one forwarded to the local marking site, if a centralized marking model is used.
	11. Collect the *Principal Feedback Form*.
	12. Complete the *Supervising Teacher Feedback Form*.
	13. Return all test booklets and other test-related materials to the secure area in the school until commencement of marking or until materials are to be forwarded to the local marking site.
	14. Send materials according to the instructions on the following pages.

Submitting Materials on June 11, 2003 (the end of the test)

It is essential that the following materials are packaged and forwarded to the local marking site immediately after completion of the test if a centralized model is used.

- **All used** test booklets;
- **All used** *Answer/Scoring Sheets*;
- Copy of the *Attendance Forms*; and
- Copy of the *Supervising Teacher Report*.

All other documentation should be verified and returned to the Assessment and Evaluation Branch after the test session.

- *Attendance Forms*;
- **All used** *Demographic Data Forms* (in envelope provided);
- *Supervising Teacher Report*;
- *Supervising Teacher Feedback Form*;
- *Principal Feedback Form*; and
- **All** damaged or misprinted booklets.

Schools in the City of Winnipeg return their envelopes to the Assessment and Evaluation Branch in the following way. Mid-Canada Courier is scheduled to pick up envelopes between **1:00 p.m. and 4:00 p.m.** on **June 11, 2003**. If your envelope will not be ready for pick up during these hours, call Mid-Canada Courier (989-5630) to make alternate arrangements.

Schools outside the City of Winnipeg return their envelopes to the Assessment and Evaluation Branch by using the Xpresspost Flexipack envelope provided and taking it to the post office.

Submitting Materials by June 20, 2003 (after local marking)

When local marking is done at a central location, the Local Marking Co-ordinator is responsible for sending the materials to Assessment and Evaluation. When local marking is done at the classroom level, the teacher is responsible for sending the materials to Assessment and Evaluation.

After local marking has been completed, prepare a package for return to Assessment and Evaluation no later than June 20, 2003.

The package must include:

- **All** *Answer/Scoring Sheets*;
- Test booklets requested by the department for the feedback marking;
- *Sample Request List*; and
- *Local Marking Co-ordinator Feedback Form*.

Jurisdictions within the City of Winnipeg send packages directly to the Assessment and Evaluation Branch via **Mid-Canada Courier (989-5630)**. The person placing the call should quote **account number E901**, give the jurisdiction name, address, and the name of the contact person.

Jurisdictions outside the City of Winnipeg return their package by Xpresspost. It is very important to package all materials in the **one Xpresspost Flexipack envelope** provided whenever possible.

After the package is sealed, deliver it to the local post office.

We have provided sufficient materials for the return of **one** envelope/package. If you must send a second envelope/package, photocopy the mailing address label and affix the copy to the second package. Note you must use a photocopy of the mailing address label as it provides Canada Post with billing information. Ask the postal clerk for an additional bar code label to attach to the second envelope/package. Ensure that the school representative retains the bar code number in case tracing the package is required.

Return **all** *Answer/Scoring Sheets*. Payment will be made according to the number of tests marked, based on the *Answer/Scoring Sheets* received.

Appendices

Appendix 1: Test-Taking Rules

Senior 1 Mathematics Standards Test

The supervising teacher is expected to read these rules aloud to students at the beginning of the Senior 1 Mathematics Standards Test:

- Check the title of your test booklet carefully. Make sure that the number on your test booklet matches the number on your *Answer/Scoring Sheet*.
- During this test session, do not proceed until instructed to do so.
- If you receive a damaged or misprinted booklet, return it to receive another booklet.
- You will not be permitted to leave the test room until **one hour** of test time has elapsed. (You may leave before that time in exceptional circumstances such as illness, when accompanied by a supervisor.)
- At the beginning of the session you should have a scientific or graphing calculator, an HB pencil, a geometry set, a ruler and an eraser. You may also have manipulative materials. No other materials are permitted. Do not exchange test materials.
- You will not give assistance to, nor receive assistance from, another student. If you require something during the test, raise your hand and I will come to you.
- Do not ask questions or request explanations with regard to the content of the questions on the test.
- Do **not** identify yourself or your school, teacher or town in your test booklet.
- When I ask you to stop writing, put your pencil down immediately.
- You may not discard any materials. The test booklet must remain intact except for the tear-out "Formulas" page numbered *ii*. Any extra paper used must be stapled into the test booklet on the appropriate page. You may **not** leave the room with any materials pertaining to the test.
- Use the appropriate side of the *Answer/Scoring Sheet* corresponding either to Choice I or to Choice II as I have indicated to you. Do not put any marks on the side you are **not** using as this affects the scannability of the form.

Appendix 2: Directing Words Used in the Test

Senior 1 Mathematics Standards Test

Students should be prepared to answer questions containing the following directing words:

The word	The question is asking for...
create	an idea or object that you have made up
justify/support/verify	an explanation, information or evidence that shows why your method, idea or answer is good
explain	words or symbols, diagrams, charts or graphs, or other methods that **make clear** what you mean or what you are thinking
illustrate/sketch	a reasonably neat picture or diagram (not necessarily to scale) that shows or explains an idea or method
model	a sketch that shows an idea; a type of explanation
assumption	anything or any condition that is not given in the question but that you have supposed or invented to find the answer to the problem
generalization	a general idea, statement, rule or principle that relates an answer or conclusion to other similar situations

Appendix 3: Sample Pre-printed Demographic Data Form

DEMOGRAPHIC DATA FORM / FORMULAIRE DE DONNÉES DÉMOGRAPHIQUES

SENIOR 1 MATHEMATICS STANDARDS TEST – JUNE 2003 /
TEST BASÉ SUR LES NORMES MATHÉMATIQUES SECONDAIRE 1 – JUIN 2003

School/ Ecole	**9999 SCHOOL NAME**	Program/ Programme	**ENGLISH**
Name/ Nom	**SURNAME, GIVEN NAME**		
Birth Date/ Date de naissance	**01/01/01**	Provincial Student Number/ Numéro provincial de l'élève	**999-999-999**

INSTRUCTIONS TO THE STUDENT:

1. Write and shade in the **Booklet No.**
2. Use an HB pencil only. Do not use ink, ball point, or felt tip pens.
3. Erase cleanly any marks you wish to change.
4. Do not mark other areas on this form.

Booklet No./
N° de cahier

DIRECTIVES À L'ÉLÈVE:

1. Inscrire votre **N° de cahier** et noircir les cercles qui y correspondent.
2. Utiliser seulement un crayon HB. Ne pas utiliser de stylo à encre ou à bille, ni de crayon feutre.
3. Bien effacer toute marque que vous désirez changer.
4. Ne pas faire de marques à d'autres endroits sur ce formulaire.

Appendix 4: Sample Generic Demographic Data Form

Appendix 4: Sample Generic Demographic Data Form

Appendix 5: Sample Attendance Form

School Number: 9999
Somewhere School
Somewhere Address
Somewhere MB R0R 0R0

Page _____ of _____

ATTENDANCE FORM—JUNE 2003

SENIOR 1 MATHEMATICS STANDARDS TEST

Booklet Number	Student Name (*please print*)	Booklet Submitted to Local Marking Co-ordinator for Marking (*check ✓ one only*)	
		Choice I	Choice II
30001	Karen Masi		✓
30002	Walter Woronowski	✓	
30003	Michael Smith	✓	
30004	DAMAGED		
30005	Jason Chu	✓	
30006	Shelley Bracken		✓
30007	UNUSED		
~~30008~~	Used with 30006 (damaged)		
~~30009~~	Used in another classroom		
~~30010~~	Used in another classroom		

Note: Record a "✓" for each booklet submitted for marking.

Mr. John Ormiston
Supervising Teacher's Name (*please print*)

Please ensure that copies of these forms are retained for your records. You will need this form to link your locally marked test with a student's name.

SENIOR 1 MATHEMATICS STANDARDS TEST

Student Response Booklet Choice I and Choice II

June 2003

Manitoba Education and Youth

Bundle No. ☐☐☐☐

Choice I ☐

Choice II ☐

Marker 1

TABLE NO. ☐☐

MARKER ID NO. ☐☐☐

Marker 2

TABLE NO. ☐☐

MARKER ID NO. ☐☐☐

Marker 3

TABLE NO. ☐☐

MARKER ID NO. ☐☐☐

SENIOR 1 MATHEMATICS STANDARDS TEST

GENERAL DIRECTIONS FOR COMPLETING THE PRE-PRINTED *DEMOGRAPHIC DATA FORM*

- Please check the following information on the *Demographic Data Form*. It is important that this information is both accurate and complete. If the information is not accurate, cross it out and write the correct information.

  1. NAME (Last and First)

  2. PROGRAM INFORMATION

  3. BIRTH DATE

- Please provide the following information on the *Demographic Data Form*:

  BOOKLET NO.: This is the five-digit number on the front of your test booklet. Write in your booklet number and fill in the appropriate circle below each number.

GENERAL DIRECTIONS FOR COMPLETING THE GENERIC *DEMOGRAPHIC DATA FORM*

- If a pre-printed form is not available for you, provide the following information on the generic *Demographic Data Form*. It is important that this information is both accurate and complete.

  1. NAME (Last and First): Print your last and first names in the spaces provided and fill in the corresponding circle below each letter.

  2. PROGRAM INFORMATION: Fill in the circle that corresponds to the program in which you are currently registered.

  3. PROVINCIAL STUDENT (MET) NO.: This is your provincial identification number which is available from your teacher.

  4. BIRTH DATE: Fill in the appropriate circles and write in the appropriate numbers.

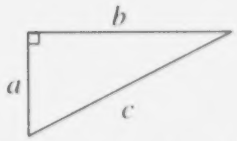
  5. BOOKLET NO.: This is the five-digit number on the front of your test booklet. Write in your booklet number and fill in the appropriate circle below each number.

  6. SCHOOL CODE: You will be provided with this four-digit number. Write in your school code and fill in the appropriate circle below each number.

SENIOR 1 MATHEMATICS

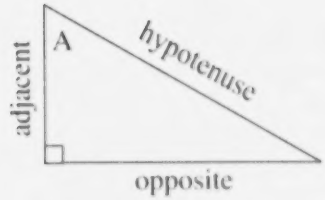
FORMULAS

Pythagorean Theorem



$$a^2 + b^2 = c^2$$

Trigonometric Ratios

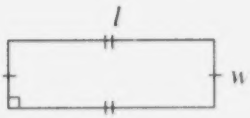


$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$

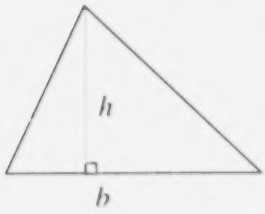
rectangle



$A = lw$

$P = 2l + 2w$

triangle

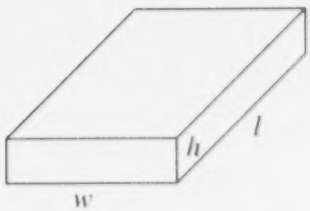


$$A = \frac{bh}{2}$$

circle

$A = \pi r^2$

$C = 2\pi r \quad C = \pi d$



Volume = lwh

Surface Area = Total area of all faces of a 3-D object.

SENIOR 1 MATHEMATICS STANDARDS TEST

POINTS TO REMEMBER

Formulas are given on the tear-out **"Formulas"** page on the other side of this page or with the question when needed. Please do not tear out any pages other than the **"Formulas"** page.

Diagrams are not drawn to scale unless indicated otherwise.

The total time allowed for writing the test is 150 minutes (120 minutes plus 30 minutes extra time which your teacher may allow if you need it).

- Do not write your name on the test booklet.
- Work alone on this test.
- You may use a scientific or graphing calculator. All other electronic aids are not allowed.
- You may use models or other manipulative materials.
- Notes, notebooks or textbooks may not be used during the test.
- You may use blank scrap paper but it must be handed in at the end of the test. You may do rough work anywhere in this booklet.
- Be sure you have attempted each question in both parts of the test including the questions for Choice I **OR** Choice II in both parts. Your teacher will tell you which Choice (I or II) to do.
- Be sure you use the correct side of the *Answer/Scoring Sheet* corresponding to the Choice (I or II) you are doing.

If you need more space to answer a question, you may use an extra page provided by your teacher. Write your Booklet ID number and question number on any extra page(s) used. Staple the page(s) into your booklet where your answer begins.

DESCRIPTION—COMMON ITEMS AND CHOICE I (Spatial Geometry)

Total possible marks: 69 **Time: 120 minutes**

This test consists of 2 parts:

Part	Description	Suggested Time (minutes)	Marks
A	*Selected-response questions*: worth one mark each.	40	25
B	*Constructed-response questions*: mark value is indicated for each question.	80	44

DESCRIPTION—COMMON ITEMS AND CHOICE II (Transformational Geometry)

Total possible marks: 69 **Time: 120 minutes**

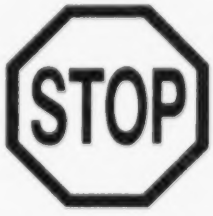
This test consists of 2 parts:

Part	Description	Suggested Time (minutes)	Marks
A	*Selected-response questions*: worth one mark each.	40	25
B	*Constructed-response questions*: mark value is indicated for each question.	80	44

DIRECTIONS FOR PART A: SELECTED-RESPONSE QUESTIONS

(Suggested Time: 40 minutes)

- Read each question carefully.
- Choose the best response and mark it on the ***Answer/Scoring Sheet***. Be sure to use the correct side of the *Answer/Scoring Sheet* (Choice I or Choice II) as directed by your teacher.
- Each question should take no more than about two minutes to answer. If a question is taking too long to answer, come back to it later.



PLEASE WAIT UNTIL THE TEACHER TELLS YOU TO TURN THE PAGE.

PART A

SELECTED-RESPONSE QUESTIONS

1. If this pattern continues, how many shaded squares will be in Figure 8?

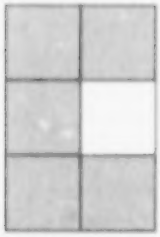


Figure 1

Figure 2

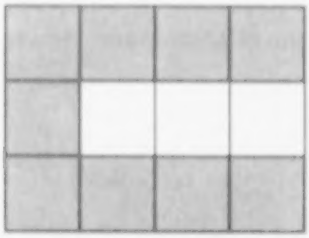


Figure 3

A) 17 B) 19 C) 23 D) 27

2. The first term of a sequence of numbers is 2. Each term after the first is obtained by multiplying the preceding term by 5, then subtracting 6. What is the 5^{th} term of the sequence?

A) 64 B) 84 C) 314 D) 1564

3. Brenda is older than Denise, and Linda is younger than Brenda. Based on this information, which conclusion is definitely correct?

A) Linda is older than Denise.

B) Linda is younger than Denise.

C) Linda is the same age as Denise.

D) It is impossible to tell whether Linda or Denise is older.

4. Which of the following samples would best determine the most popular style of music in Manitoba?

   A) Every fourth person leaving a symphony concert.

   B) All of the students in your class.

   C) 300 Manitobans chosen randomly.

   D) A random sample of school music teachers.

5. Which situation illustrates a positive correlation?

   A) Temperature and sales of hot chocolate.

   B) Time of day and probability of precipitation.

   C) Number of cigarettes smoked and life expectancy.

   D) Number of coins and the total value of the coins.

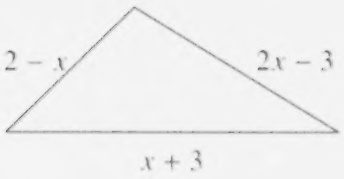
6. Statistical information presented by the media may be misleading.
   The word used to describe this is

   A) hypothesis. B) bias. C) sample. D) conclusion.

7. Simplify $(4x - 3y) - (8x + 5y)$

   A) $-4x + 2y$ B) $-4x - 2y$ C) $-4x - 8y$ D) $12x + 2y$

8. The perimeter of the triangle is



A) $2x + 2$ B) $2x - 2$ C) $4x + 2$ D) $x + 10$

9. Find the solution to $2x - 8 = 12$ and use this solution to find the value of the expression $3x - 2$.

A) -8 B) 4 C) 10 D) 28

10. Sal flips a coin and rolls a 6-sided cube (sides numbered 1 to 6). What is the probability of getting a head and a 4?

A) $\frac{1}{12}$ B) $\frac{1}{8}$ C) $\frac{1}{6}$ D) $\frac{2}{3}$

11. Which one of the following statements is **FALSE** for the expression $\frac{-3}{7}y^2$?

A) The exponent is 2.

B) The base is y.

C) The numerical coefficient is $\frac{-3}{7}$.

D) The value of the expression can be positive.

12. Evaluate $100^0 a^5 b^0$ when $a = 2$ and $b = \frac{1}{4}$.

A) 1 B) 8 C) 32 D) 800

13. Simplify $\left(xy^2\right)^3$

A) xy^6 B) x^3y^6 C) x^3y^5 D) x^4y^5

14. Determine the expression equivalent to $\frac{\left(5^6\right)\left(4^6\right)}{\left(5^2\right)^3}$

A) 4^6 B) 5^3 C) 4^2 D) $\left(5^1\right)\left(4^6\right)$

15. Simplify the following expression:

$$\frac{\left(x^2y^3\right)\left(x^6y^5\right)}{x^4y^{-3}}$$

A) x^8y^{12} B) x^4y^{11} C) x^4y^5 D) x^3y^{-5}

16. Which one of the following expressions is equal to 1?

A) $\left(\frac{1}{3}\right)^4 \div 3^4$ B) $\frac{3^7}{3^3} \div 3^4$ C) $3^0 \times 3^1$ D) $3^3 \times 2^0 \times 1$

17. Using your calculator, which of the following has the greatest value?

A) 2^{41} B) 3^{29} C) 4^{21} D) 5^{17}

18. Which of the following lists the expressions in order from least to greatest?

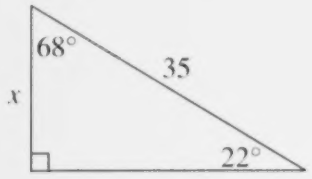
A) $\left(\sqrt{8}\right)^3, \sqrt{36}, -\sqrt{10}$

B) $-\sqrt{10}, \left(\sqrt{8}\right)^3, \sqrt{36}$

C) $-\sqrt{10}, \sqrt{36}, \left(\sqrt{8}\right)^3$

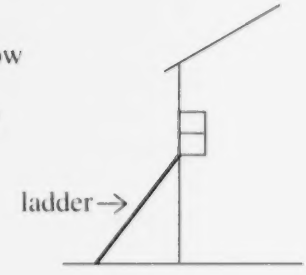
D) $\sqrt{36}, -\sqrt{10}, \left(\sqrt{8}\right)^3$

19. Which trigonometric ratio can be used to find x in the following diagram?



A) $\sin 68° = \frac{x}{35}$ B) $\cos 22° = \frac{x}{35}$ C) $\tan 68° = \frac{x}{35}$ D) $\sin 22° = \frac{x}{35}$

20. A ladder 4 metres in length, reaches the bottom of a window that is 3.5 metres from the ground.
What angle does the **top** of the ladder make with the wall?



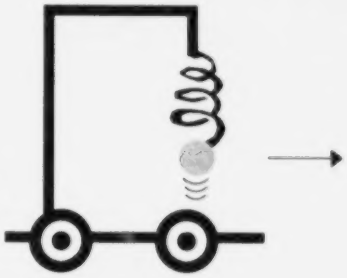
A) 29° B) 41° C) 49° D) 61°

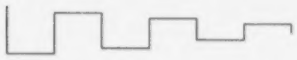
You have finished the common questions.

Now, complete Choice I *OR* Choice II.

CHOICE I: SPATIAL GEOMETRY

21. A ball attached to a spring bounces up and down as the cart moves slowly forward at a constant speed. Which locus of points best illustrates the motion of the ball?



A) 

B)

C)

D)

22. Joan draws two circles that partly overlap. Which locus of points illustrates **only** the region that overlaps?

A)

B)

C)

D)

23. A model is built using the following base plan.

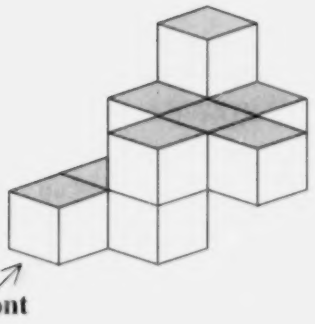
4	3	3
4	3	3

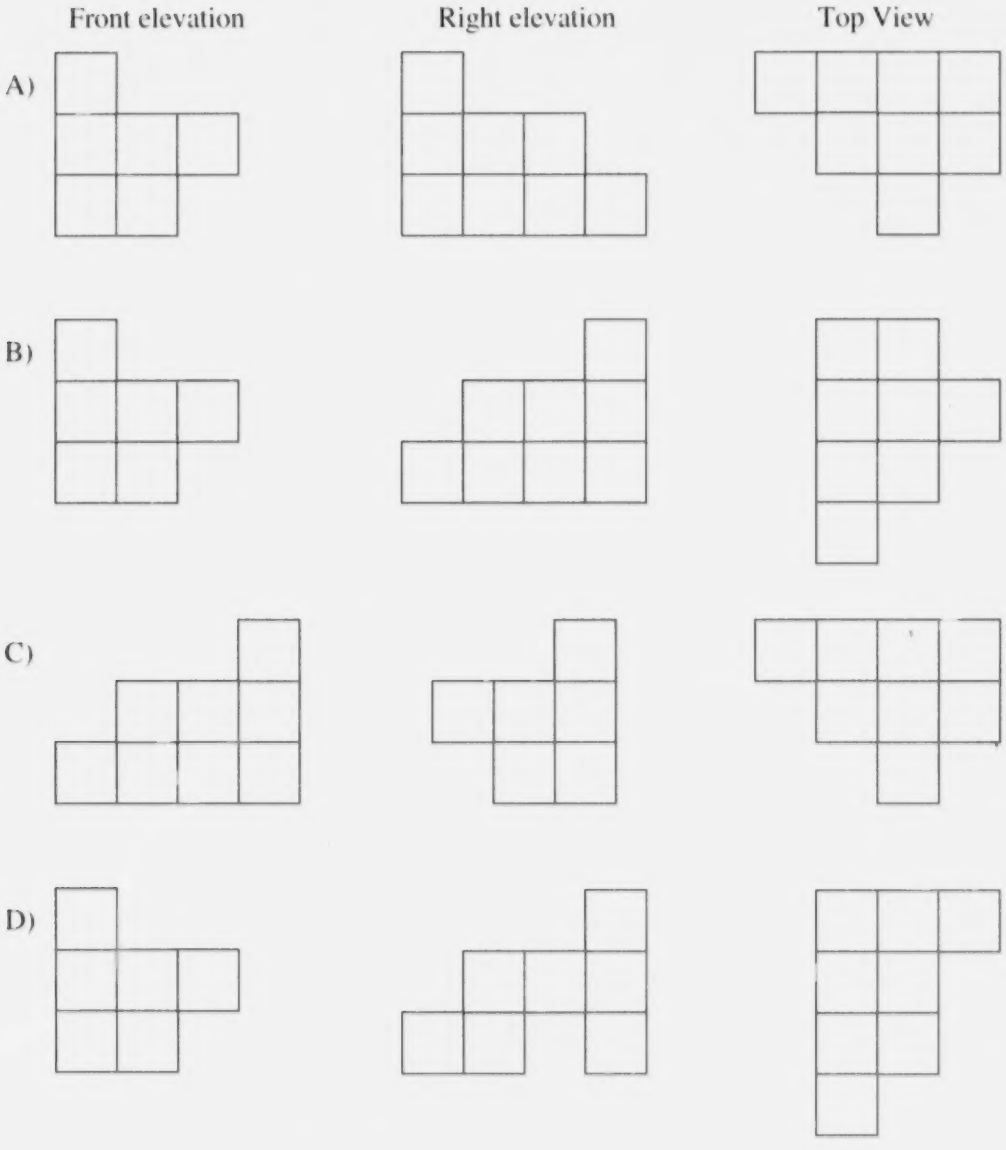
Front

What is the total number of blocks that can be seen from the **right elevation**?

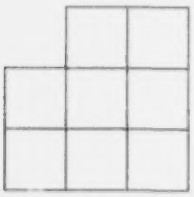
A) 6 B) 8 C) 10 D) 14

24. Select the elevations and top view that could represent the 3-D object.

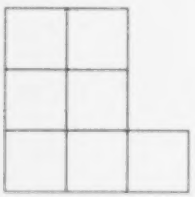




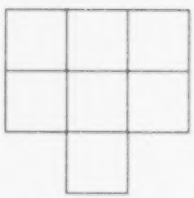
25. Which one of these 3-D objects could match these three views?



Right elevation

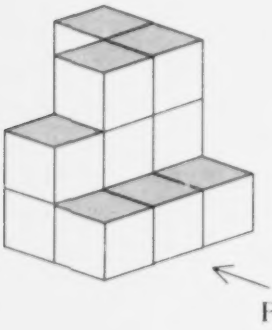


Front elevation

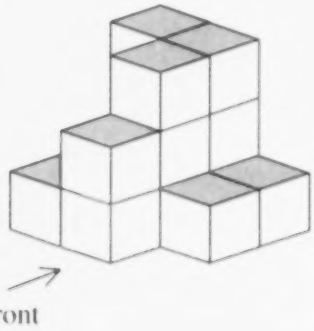


Top view

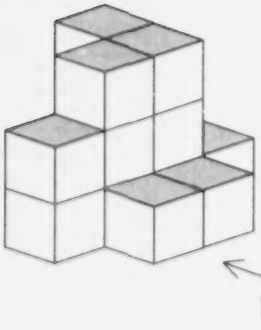
A)



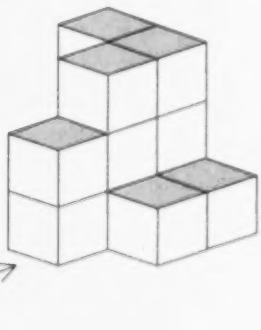
B)



C)



D)



End of Choice I Selected-Response Questions.

Now go to Part B: Constructed-Response Questions.

CHOICE II: TRANSFORMATIONAL GEOMETRY

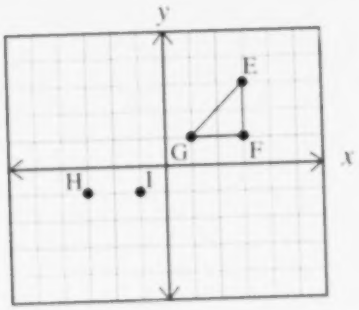
21. Identify the coordinates for point J so that ΔEFG is congruent to ΔHIJ.

A) $(-1, -3)$

B) $(-1, 2)$

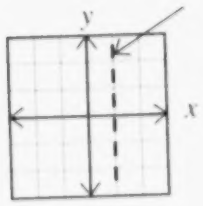
C) $(-3, 2)$

D) $(-2, -3)$

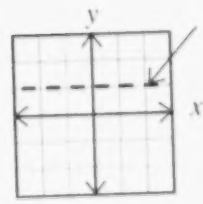


22. In which diagram does the arrow point to the line of reflection used to make the image $\Delta D'E'F'$ from ΔDEF?

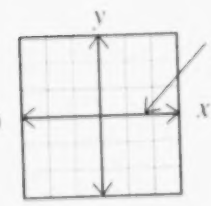
A)



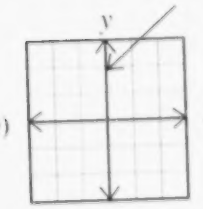
B)

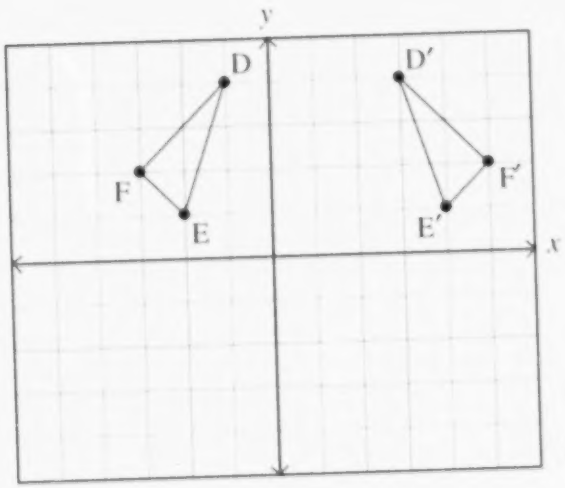


C)



D)



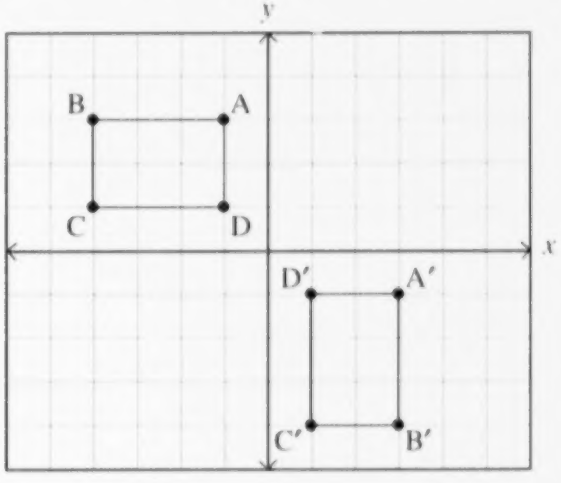


23. What are the coordinates of the image of point $A(-3, -1)$ after the given transformation?

$$(x, y) \rightarrow (x + 6, y - 2)$$

A) $(-3, -3)$ B) $(-9, -3)$ C) $(3, -3)$ D) $(3, 3)$

24. Identify the transformation made to rectangle ABCD to produce the image A′B′C′D′.



A) dilatation B) reflection C) rotation D) translation

25. Indicate the two types of transformations which always produce a congruent image.

A) translation and rotation.

B) reflection and dilatation.

C) dilatation and rotation.

D) translation and dilatation.

End of Choice II Selected-Response Questions.

Now go to Part B: Constructed-Response Questions.

DIRECTIONS FOR PART B: CONSTRUCTED-RESPONSE QUESTIONS

(Suggested Time: 80 minutes)

Write your answers in the space provided with each question. If you need more space to answer a question, you may use an extra page provided by your teacher. Write your Booklet ID number and question number on any extra page(s) used. Staple the page(s) into your booklet where your answer begins.

Directing Words

Some questions may include directing words such as *explain*, *justify* and *create*. These words are explained below.

The word	The question is asking for...
create	an idea or object that you have made up
justify/support/verify	an explanation, information or evidence that shows why your method, idea or answer is good
explain	words or symbols, diagrams, charts or graphs, or other methods that **make clear** what you mean or what you are thinking
illustrate/sketch	a reasonably neat picture or diagram (not necessarily to scale) that shows or explains an idea or method
model	a sketch that shows an idea; a type of explanation
assumption	anything or any condition that is not given in the question but that you have supposed or invented to find the answer to the problem
generalization	a general idea, statement, rule or principle that relates an answer or conclusion to other similar situations

Suggestions for answering OPEN-RESPONSE QUESTIONS:

- provide **complete answers**;
- let the mark values for each question guide you in answering it;
- provide good explanations and justifications; and
- use a systematic and well-organized method in communicating the answer.

DO NOT USE

PART B

CONSTRUCTED-RESPONSE QUESTIONS

26. Josie surveys students at three high schools between 11:30 a.m. and 1:00 p.m. She asks: "Do you think all schools should have an anti-smoking policy?" 101

Based on the data Josie collected from the students, she concludes: "Schools should **NOT** have an anti-smoking policy."

a) State two biases that may have affected this conclusion.

Bias 1	Bias 2

b) Explain how to avoid one of the biases in a).

3 marks

27. Jim, Paul and Larry bought a total of 119 candy canes at the store. Larry has 18 fewer candy canes than Jim, and Paul has 25 fewer than Jim. 102

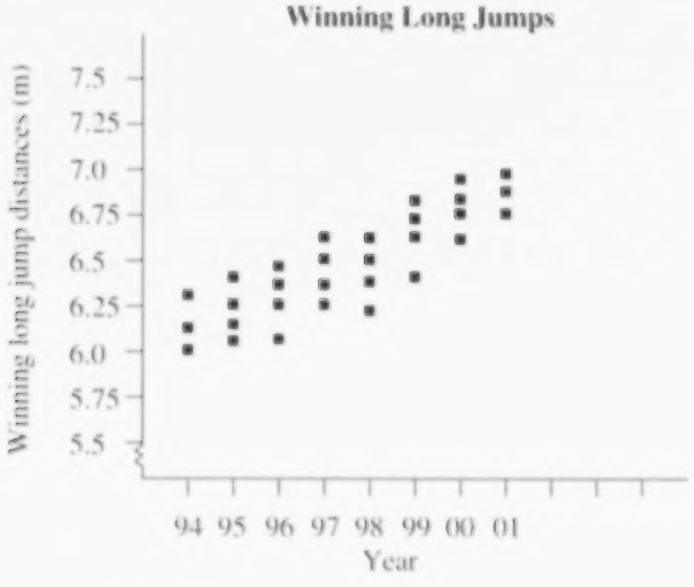
a) How many candy canes does Jim have? Show your work.

b) Verify your answer.

3 marks

DO NOT USE

28. The following scatterplot presents information about annual track and field long jump events for various years: 103



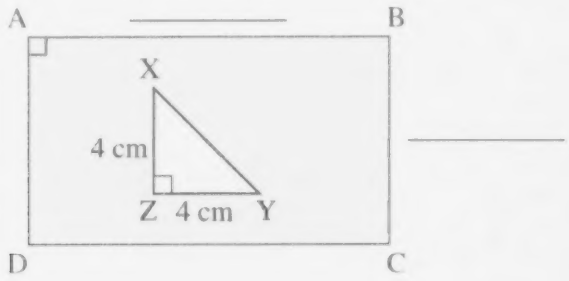
a) Draw the line of best fit.

b) Based on your line of best fit, the winning result for 2004 will be _____ metres.

2 marks

29. **OPEN-RESPONSE QUESTION**

ABCD is a rectangle and XYZ is a smaller triangle inside the rectangle.



a) • Create a **binomial** expression (2 unlike terms) for the length $\overline{AB}$ and mark it on the diagram.

• Create a **monomial** expression (1 term) for the width $\overline{BC}$ and mark it on the diagram.

b) • Determine the algebraic expression for the area of the shaded region. Show your work.

• Simplify your algebraic expression.

c) • State one value for the variable(s) in your expressions that is **not** possible for the diagram.

• Justify your answer.

6 marks

DO NOT USE

30. Consider the following numbers: 5π, $\sqrt{5}$, 5 105

- Which of these is a rational number? _____
- Justify your answer in words.

2 marks

31. Marie has saved up $300 to buy a $150 portable CD player and some CDs. 106
Marie created the **equation** below that shows the cost of the CD player and lets Marie calculate how many CDs she will be able to buy.

$$17.50x + 150 = 300$$

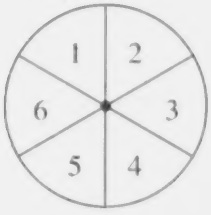
a) Explain what the variable x represents in Marie's equation.

b) What is the maximum number of CDs Marie can buy? Show your work.

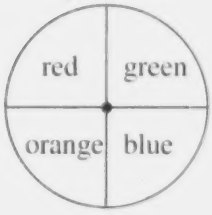
3 marks

32. **OPEN-RESPONSE QUESTION**

Spinner 1



Spinner 2



a) What is the theoretical probability of getting the **combined** outcome "even number" and "red"?

b) Spinners are not the only tools you can use for probability experiments.

- Describe in words, any two events whose **combined** outcome has a probability of $\frac{1}{6}$. Use an example other than spinners.
- Show your calculations.

c) State any two events whose **combined** outcome has a probability of 0.

4 marks

DO NOT USE

33. **OPEN-RESPONSE QUESTION** 108

a) The equation below is made of 2 binomials.
Solve and verify the equation.

$$6x - 3 = 3x - 9$$

Solve | **Verify**

b) • Create an equation different from the one in a), but that has the same solution.
Use two different binomials for your equation.

[ ] = [ ]
binomial binomial

• Verify your response.

4 marks

34. The planet Earth is about 1.5×10^8 kilometres from the sun. 109
The planet Pluto is about 5 900 000 000 kilometres from the sun.
- By how many kilometres is Earth closer to the sun than Pluto? Show your work.
- Express your answer in scientific notation.

2 marks

DO NOT USE

35. • What value must replace the x to make the equation true? 110

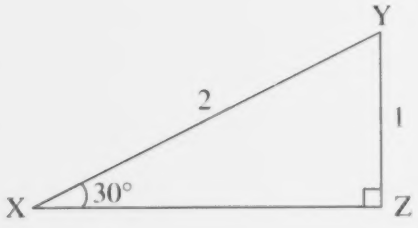
$$\frac{2^8}{2^x} = 32$$

$x =$ _____

• Justify your answer.

2 marks

36. a) Using the diagram below, complete the following statement: $\sin 30° = \cos$ _____ °. 111



b) Calculate the length of $\overline{XZ}$ using 2 different methods. Show your work.

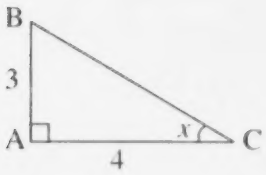
A | **B**

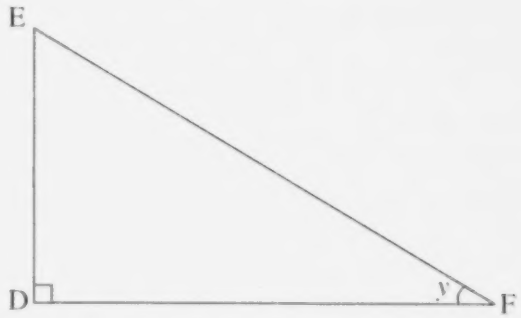
3 marks

37. OPEN-RESPONSE QUESTION

ΔABC and ΔDEF are both right triangles.

Note: diagrams are not drawn to scale.





a) Given $\overline{AB} = 3$ and $\overline{AC} = 4$, calculate the measure of $\angle ACB$ (x) to the nearest degree.

b) If $\angle x = \angle y$, explain why ΔABC is similar to ΔDEF.

c)
- Create measurements for the sides of ΔDEF so that ΔABC is similar to ΔDEF.
- Use the ratios of the sides to prove that these two triangles are similar.

4 marks

DO NOT USE

38. A student's final mark is calculated by the following formula: 113

$$\text{Final Mark} = 0.7(\text{Term Mark}) + 0.3(\text{Exam Mark})$$

a) If Erin's term mark is 80% and her exam mark is 66%, what is Erin's final mark?

b) Bart's term mark before the exam is 70%.

$$\text{Final Mark} = 0.7(\text{Term Mark}) + 0.3(\text{Exam Mark})$$

- Is it possible for Bart to end up with a final mark 80% or higher?
- Justify your answer.

3 marks

You have finished the common questions.

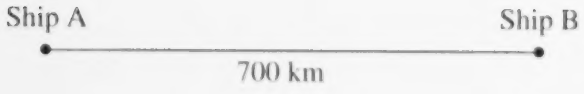
Now, complete Choice I *OR* Choice II.

DO NOT USE

CHOICE I: SPATIAL GEOMETRY

39. A sailboat on the ocean is in distress. The captain radios for help. Two ships hear the call for help. These ships are 700 km from each other. Ship A can receive radio transmissions from 500 km away. Ship B can receive radio transmissions from 300 km away. 114

a)
- For Ship A, sketch the locus of points from which it can receive radio transmissions.
- For Ship B, sketch the locus of points from which it can receive radio transmissions.
- Shade the area where the sailboat could be located.



b) The sailboat drifts and soon cannot be heard by either ship. Describe or illustrate the locus of points where the sailboat could be.

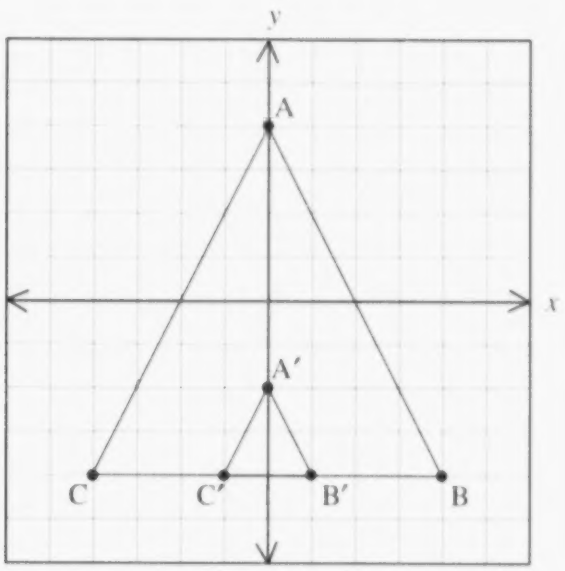
3 marks

END OF TEST—CHOICE I

DO NOT USE

CHOICE II: TRANSFORMATIONAL GEOMETRY

39. 114



a) Name the type of transformation made to ΔABC to produce the image $\Delta A'B'C'$.

b) How many times longer is $\overline{AC}$ than $\overline{A'C'}$?

c) Calculate the following ratio: area of ΔABC to area of $\Delta A'B'C'$.

3 marks

END OF TEST—CHOICE II

SENIOR 1 MATHEMATICS STANDARDS TEST

Marking Guide
Choice I and Choice II

June 2003

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Education
and Youth

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Manitoba Education and Youth,
Assessment and Evaluation Branch,
Winnipeg, Manitoba R3E 3J5

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General Marking Instructions

Please make no marks in the *Student Response Booklets*.

Please ensure that:

- each student's final result is recorded, by test booklet number, on the corresponding ***Answer/Scoring Sheet*** (computer scan sheet);
- the totals and the grand total are written at the bottom;
- the *Answer/Scoring Sheet* is complete and correct;
- a copy has been made for school records; and
- **only a pencil is used to complete the *Answer/Scoring Sheets*, by both students and markers.**

Once marking is completed, please forward the *Answer/Scoring Sheets* to Manitoba Education and Youth (for more information see the *Administration Manual for Supervising Teachers*).

A. Scoring the Selected-Response Questions

Please follow the instructions on the ***Answer Key for Selected-Response Questions*** on page 5 for Choice I or on page 7 for Choice II.

B. Scoring the Constructed-Response Questions

The respective marking key or scoring rubric should be used in conjunction with the ***Senior 1 Mathematics: Manitoba Curriculum Framework of Outcomes and Senior 1 Standards*** when assigning scores to student responses.

B.1 Scoring Guidelines—Restricted-Response Questions (with or without Explanation)

Each question of this type is designed to elicit a well-defined response according to the associated specific outcome(s) and relevant mathematical processes. Their purpose is to determine whether a student meets the standards for the course (level 2) as they relate to the knowledge and skills associated with the question. **Scoring is in whole-mark intervals (there are no half-marks).**

To receive full marks, a student's response must be complete and correct. Partial marks may be awarded for a "relevant strategy" with execution errors. ***A relevant strategy is defined as one that is consistent with the specific outcome(s) and mathematical processes associated with the question that, if properly executed, would lead to the correct answer.*** Where alternative strategies are possible, the ***Marking Key*** makes mention of them.

For some questions the *Marking Key* identifies errors that are "trivial". No marks are to be deducted for such errors. In order to be considered trivial, an error must be conceptually unrelated to the outcome(s) associated with the question and not lead to a mathematically incorrect answer. Such errors are distinct from minor errors (generally not conceptual in nature but leading to an incorrect answer) and major errors (an omission or error that is conceptual in nature).

B.2 Scoring Guidelines—Open-Response Questions

These questions are designed to elicit student responses at any of the three levels of achievement defined in *Senior 1 Mathematics: Manitoba Curriculum Framework of Outcomes and Senior 1 Standards*. The rubrics contain the language of the curricular standards in order to facilitate scoring in a manner that is consistent with those standards. The recommended procedure for scoring student responses is as follows:

1. Read the relevant specific outcome(s) in *Senior 1 Mathematics Framework of Manitoba Outcomes and Senior 1 Standards*.
2. Read the possible solution(s) provided in this document.
3. Study the student exemplars provided and the rationales for the assigned scores.
4. Carefully view all of the student's response and decide which of the three levels of achievement ("exceptional understanding", "good understanding" or "limited understanding") best applies. Whether the response clearly fits into one category or straddles two, this process will narrow down the number of possible scores that can be assigned to the response.
5. Compare the features of the student's response with the general performance indicators accompanying the mark values and the specific performance indicators (criteria) contained in the rubric. Note that the specific performance indicators only typify a student's response in a given score category. An exact match is not anticipated.

C. Assistance

If, during marking, any marking issue arises that cannot be resolved locally, please call Manitoba Education and Youth at the earliest opportunity to advise and/or seek assistance. If required, we will connect you to an advisor. Also, please be sure to notify us before making any modifications to the answer keys or scoring rubrics. Contact person: Ken Horton at 945-2576 (1 800 282-8069, extension 2576).

SCORING GUIDELINES

Answer Key for Selected-Response Questions

Answer Key for Selected-Response Questions—Choice I

SELECTED RESPONSE ANSWER

Fill in the best answer for each question.

1	B	14	A
2	C	15	B
3	D	16	B
4	C	17	B
5	D	18	C
6	B	19	D
7	C	20	A
8	A	21	C
9	D	22	A
10	A	23	B
11	D	24	B
12	C	25	D
13	B		

If you are using this sheet by punching out holes corresponding to the correct answers and overlaying this sheet on the *Answer/Scoring Sheet*, then

1) check the student's responses for multiple bubbles first (questions with multiple bubbles are to be scored as "0");

2) overlay this page on the *Answer/Scoring Sheet*; and

3) count the number of correct responses, excluding questions with multiple responses, if any.

You may also score the selected-response questions by making a transparency of this page and overlaying it on the *Answer/Scoring Sheet*.

Remember to write the total score for the selected-response questions at the bottom of the *Answer/Scoring Sheet*.

Answer Key for Selected-Response Questions—Choice II

If you are using this sheet by punching out holes corresponding to the correct answers and overlaying this sheet on the *Answer/Scoring Sheet*, then

1) check the student's responses for multiple bubbles first (questions with multiple bubbles are to be scored as "0");

2) overlay this page on the *Answer/Scoring Sheet*; and

3) count the number of correct responses, excluding questions with multiple responses, if any.

You may also score the selected-response questions by making a transparency of this page and overlaying it on the *Answer/Scoring Sheet*.

Remember to write the total score for the selected-response questions at the bottom of the *Answer/Scoring Sheet*.

SELECTED RESPONSE ANSWER

Fill in the best answer for each question.

1	B	14	A
2	C	15	B
3	D	16	D
4	C	17	A
5	D	18	C
6	B	19	D
7	C	20	A
8	A	21	A
9	D	22	A
10	A	23	C
11	D	24	B
12	C	25	A
13	B		

SCORING GUIDELINES

Marking Key and *Standards-Based Scoring Rubrics* (including student exemplars)

Question No. 26

Specific Outcome: B.1 (RR/E)

♦ Question

3 marks

Josie surveys students at three high schools between 11:30 a.m. and 1:00 p.m. She asks: "Do you think all schools should have an anti-smoking policy?"

Based on the data Josie collected from the students, she concludes: "Schools should **NOT** have an anti-smoking policy."

a) State two biases that may have affected this conclusion.

Bias 1	Bias 2

b) Explain how to avoid one of the biases in a).

♦ Answer Key

a) Any reasonable bias accepted.

Sample responses:

- what schools were selected (non-smoking vs smoking)?
- age of students
- time of day smokers are outside
- small sample
- non-smokers that are indifferent
- asking students (majority) only, but not teachers/administration/etc.

b) Any reasonable explanation is accepted.

Sample response:

Be sure to ask students of all ages.

Marking Key

3 marks:

- 1 mark for a reasonable bias
- 1 mark for a second reasonable bias
- 1 mark for explaining how to avoid one bias

Marker note(s):

- *if student explains how to avoid a bias in b) that was not given in a), that is acceptable*

Question No. 27

Specific Outcome: A.1 (RR)

♦ Question

3 marks

Jim, Paul and Larry bought a total of 119 candy canes at the store. Larry has 18 fewer candy canes than Jim, and Paul has 25 fewer than Jim.

a) How many candy canes does Jim have? Show your work.

b) Verify your answer.

♦ Answer Key

a) Let x be number of candy canes Jim has

$x - 18 \rightarrow$ Larry

$x - 25 \rightarrow$ Paul

$$x + x - 18 + x - 25 = 119$$
$$3x - 43 = 119$$
$$3x = 162$$
$$x = 54$$

∴ Jim has 54 candies.

OR

"guess and check"
say Jim has 50,
then Larry has $50 - 18 = 32$
and Paul has $50 - 25 = 25$
$50 + 32 + 25 = 107 \neq 119$
Try Jim has 60, etc.

b) $54 + (54 - 18) + (54 - 25)$
$= 54 + 36 + 29$
$= 119$

Marking Key

3 marks:

- 1 mark for correct strategy*
- 1 mark for correct solution
- 1 mark for correct verification (verifying that values work)

Marker note(s):

- *other strategies are possible*
- *for a correct "guess and check" strategy, at least 2 correct operations must be shown, such as assigning a number for Jim and calculating how many Larry has*
- *"119 – 18 – 25" is an incorrect strategy*
- **setting up a correct equation is a correct strategy*
- *a student who has an incorrect strategy and solution but verifies correctly, award 1 mark*

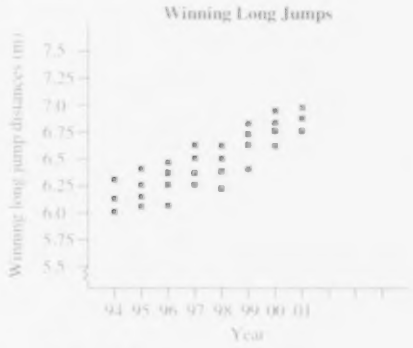
Question No. 28

Specific Outcome: B.6 (RR)

♦ Question

2 marks

The following scatterplot presents information about annual track and field long jump events for various years:

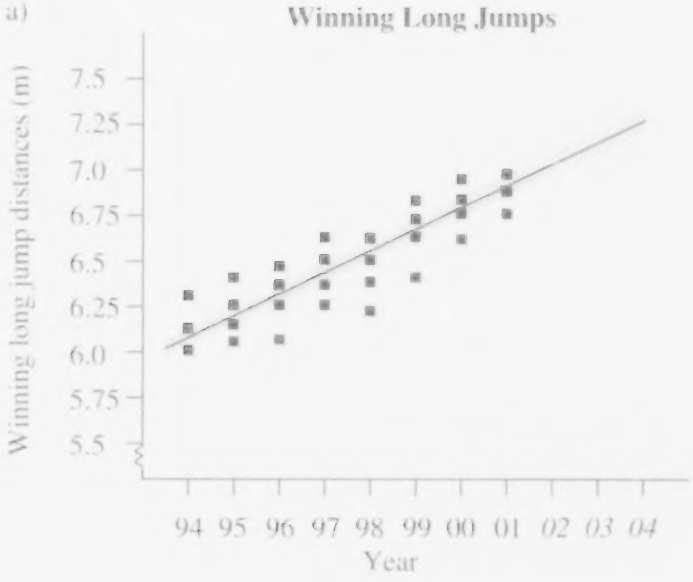


a) Draw the line of best fit.

b) Based on your line of best fit, the winning result for 2004 will be _____ metres.

♦ Answer Key

a)



b) See student's graph. Value must coincide with student's line of best fit.

Marking Key

2 marks:

- 1 mark for line of best fit in a)
- 1 mark for answer in b) based on student's line of best fit

Marker note(s):

- *a correct line of best fit is contained mostly in the shaded region*

Question No. 29

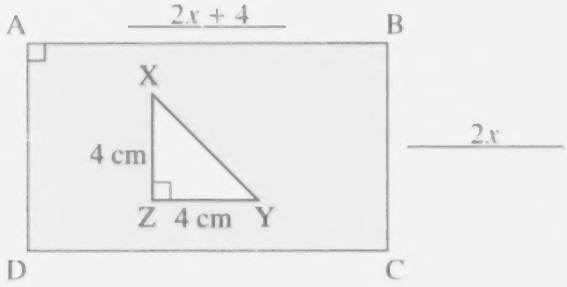
Specific Outcomes: C.4 and C.8 (OR)

QUESTION AND ANSWER KEY

29. **OPEN-RESPONSE QUESTION** | 6 marks |

ABCD is a rectangle and XYZ is a smaller triangle inside the rectangle.

Sample response:



a) • **Create a binomial expression (2 unlike terms) for the length $\overline{AB}$ and mark it on the diagram.**
• **Create a monomial expression (1 term) for the width $\overline{BC}$ and mark it on the diagram.**

b) • **Determine the algebraic expression for the area of the shaded region. Show your work.**
• **Simplify your algebraic expression.**

$\text{area} = (2x + 4)(2x) - \frac{1}{2}(4)(4)$ ***OR*** $\text{area} = (2x + 4)(2x) - 8$

$= 4x^2 + 8x - 8$

c) • **State one value for the variable(s) in your expressions that is not possible for the diagram.**
• **Justify your answer.**

Length of the rectangle is positive, so $2x + 4$ has to be positive, so x cannot be -2.

OR

Width of the rectangle is positive, so $2x$ has to be positive, so x cannot be -2.

OR

The triangle fits inside the rectangle, $2x$ must be larger than 4, so x cannot be 1.

OR

Area must be positive, so $x \neq -1$ ***OR*** $A = 4(-1)^2 + 8(-1) - 8$

$A = -12$

Scoring Rubric

	Score and General Performance Indicators	Specific Performance Indicators/Criteria
Level 1 limited understanding	**1** **weak attempt**	- any 1 criterion met
	2 **reasonable attempt, major errors or omissions**	- any 2 criteria met
Level 2 good understanding	**3** **reasonable strategy, minor errors and/or omissions**	- any 3 criteria met
	4 **sound strategy, mostly complete, minor errors**	- any 4 criteria met
	5 **response complete with one minor error or omission**	- any 5 criteria met
Level 3 exceptional understanding	**6** **response complete, correct, showing insightful thinking, critical thinking, or a generalization**	- all 6 criteria met

Criteria:

1. correct binomial for the length $\overline{AB}$
2. correct monomial for the width $\overline{BC}$ (must exceed "4")
3. correct algebraic expression for area
4. algebraic expression for area (as given by student) correctly simplified
5. a restriction for one variable
6. justification for the restriction

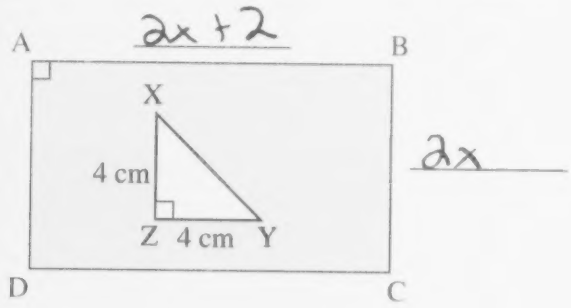
Marker note(s):

- *in c), explaining that a value for the variable is not possible because it makes the length shorter than the width, is acceptable*
- *excluding units is a trivial error*
- *monomial $\overline{BC}$ can be a constant (bigger than 4)*

EXEMPLARS

29. **OPEN-RESPONSE QUESTION**

ABCD is a rectangle and XYZ is a smaller triangle inside the rectangle.



a) • Create a **binomial** expression (2 unlike terms) for the length $\overline{AB}$ and mark it on the diagram.

• Create a **monomial** expression (1 term) for the width $\overline{BC}$ and mark it on the diagram.

b) • Determine the algebraic expression for the area of the shaded region. Show your work.

$(2x+2)(2x)-8$

• Simplify your algebraic expression.

c) • State one value for the variable(s) in your expressions that is **not** possible for the diagram.

• Justify your answer.

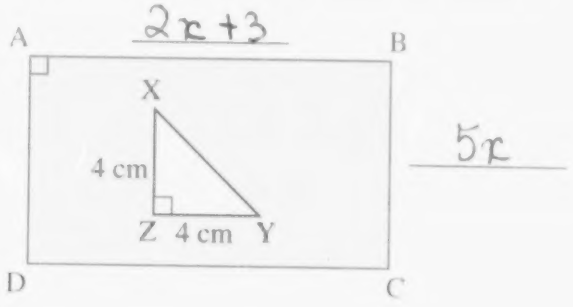
values that are not reasonable are 3, 2, 4, and 1 because it cannot be smaller than the length of the sides of the triangle on the inside of the rectangle

4 marks
- criteria 1, 2, 3 and 6 met

6 marks

29. **OPEN-RESPONSE QUESTION**

ABCD is a rectangle and XYZ is a smaller triangle inside the rectangle.



a) • Create a **binomial** expression (2 unlike terms) for the length $\overline{AB}$ and mark it on the diagram.

• Create a **monomial** expression (1 term) for the width $\overline{BC}$ and mark it on the diagram.

b) • Determine the algebraic expression for the area of the shaded region. Show your work.

$$5x(2x+3) - \left(\frac{4(4)}{2}\right)$$
$$10x^2+15x-\left(\frac{16}{2}\right)$$
$$10x^2+15x+(-8)$$
$$10x^2+15-8$$
$$10x^2+7$$

• Simplify your algebraic expression.

c) • State one value for the variable(s) in your expressions that is **not** possible for the diagram.

• Justify your answer.

$2x+3$ and $5x$

We need x in our expression because without x the who expression would be one termed. Without x the expression would be; 2+3 and 5, ∴ that is why we need variables.

3 marks
- criteria 1, 2 and 3 met

6 marks

Question No. 30

Specific Outcome: C.2 (RR/E)

♦ Question

2 marks

Consider the following numbers: 5π, $\sqrt{5}$, 5

- Which of these is a rational number? _____
- Justify your answer in words.

♦ Answer Key

- 5
- 5 can be expressed as a fraction

OR

5π and $\sqrt{5}$ have both non-terminating and non-repeating decimals

OR

5π and $\sqrt{5}$ cannot be expressed as fractions

OR

5 can be expressed as $\frac{a}{b}$ where $b \neq 0$ and a and b are integers

Marking Key

2 marks:

- 1 mark for correct answer
- 1 mark for correct justification (clear explanation of whether a number is rational or not)

Marker note(s):
The following justifications are not sufficient:

- *"non-repeating decimal"*
- *expressing 5π and $\sqrt{5}$ in decimal form with no explanation*

Question No. 31

Specific Outcome: E.2 (RR)

♦ Question

3 marks

Marie has saved up $300 to buy a $150 portable CD player and some CDs. Marie created the **equation** below that shows the cost of the CD player and lets Marie calculate how many CDs she will be able to buy.

$$17.50x + 150 = 300$$

a) Explain what the variable x represents in Marie's equation.

b) What is the maximum number of CDs Marie can buy? Show your work.

♦ Answer Key

a) x represents how many CDs Marie can buy.

b) $17.50x = 300 - 150$

$$x = \frac{150}{17.50}$$

$$= 8.57$$

Marie can buy 8 CDs.

Marking Key

3 marks:

- 1 mark for correct answer in a)
- 1 mark for correct strategy in b)
- 1 mark for correct conclusion in b)

Marker note(s):

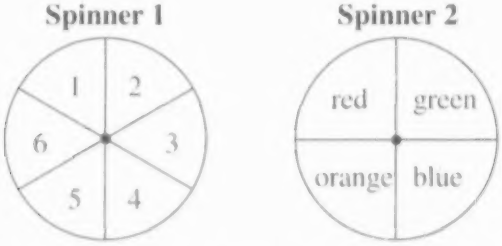
- *if a student rounds up to 9 CDs, or leaves it at 8.57 or rounds incorrectly award a maximum of 2 marks out of 3*
- *if a student includes taxes and shows a correct answer award full marks*

Question No. 32

Specific Outcome: G.3 (OR)

QUESTION AND ANSWER KEY

32. **OPEN-RESPONSE QUESTION** | 4 marks |



a) What is the theoretical probability of getting the combined outcome "even number" and "red"?

$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ *OR* $\frac{3}{6} \times \frac{1}{4} = \frac{3}{24}$

Sample responses:

b) Spinners are not the only tools you can use for probability experiments.

- **Describe in words, any two events whose combined outcome has a probability of $\frac{1}{6}$. Use an example other than spinners.**
- **Show your calculations.**

Roll a 1 or 2 with a number cube and toss a coin and get 'heads'.

$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$

c) State any two events whose combined outcome has a probability of 0.

Rolling a 7 with a 6-sided number cube and drawing a club from a deck of cards.

$0 \times \frac{1}{4} = 0$

Scoring Rubric

	Score and General Performance Indicators	Specific Performance Indicators/Criteria
Level 1 limited understanding	**1 weak attempt**	- any 1 criterion met
Level 2 good understanding	**2 reasonable strategy, minor errors and/or omissions**	- any 2 criteria met
	3 response complete with one minor error or omission	- any 3 criteria met
Level 3 exceptional understanding	**4 response complete, correct, showing insightful thinking, critical thinking, or a generalization**	- all 4 criteria met

Criteria:

1. correct calculation in a)

2. appropriate different materials or situations described in b)

3. probability shown to be $\frac{1}{6}$ *in b)*

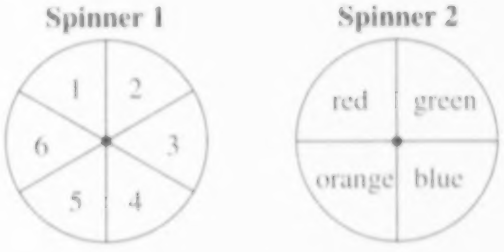
4. events described where combined probability is 0

Marker note(s):

- *using tree diagrams is an acceptable strategy*
- *if a student uses the addition law of probability in b) calculation must be shown and explained to meet criterion 3*

EXEMPLARS

32. **OPEN-RESPONSE QUESTION**



a) What is the theoretical probability of getting the **combined** outcome "even number" and "red"?

$\frac{3}{6} \times \frac{1}{4} = \frac{3}{24} = \frac{1}{8}$

b) Spinners are not the only tools you can use for probability experiments.

- Describe in words, any two events whose **combined** outcome has a probability of $\frac{1}{6}$. Use an example other than spinners.
- Show your calculations.

A coin - heads or tails & A cup falling on its side, top or bottom

$\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

c) State any two events whose **combined** outcome has a probability of 0.

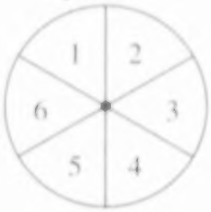
The product of the 2 numbers you get if you throw 2 dice being more than 36

4 marks
• all criteria met

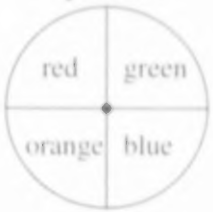
4 marks

32. **OPEN-RESPONSE QUESTION**

Spinner 1



Spinner 2



a) What is the theoretical probability of getting the **combined** outcome "even number" and "red"?

$$\frac{3}{6} + \frac{1}{4} = \frac{4}{10} = \frac{2}{5}$$

b) Spinners are not the only tools you can use for probability experiments.

- Describe in words, any two events whose **combined** outcome has a probability of $\frac{1}{6}$. Use an example other than spinners.
- Show your calculations.

Throwing 1 twelve-sided die and obtaining a 3 on the first roll or a 4 on the second roll.

$$\frac{1}{12} + \frac{1}{12} = \frac{2}{12} = \frac{1}{6}$$

c) State any two events whose **combined** outcome has a probability of 0.

Throwing 2 – 7's if you are using 2 six-sided dice.

3 marks
- criteria 2, 3* and 4 met
  * see marker note

4 marks

Question No. 33

Specific Outcome: E.2 (OR)

QUESTION AND ANSWER KEY

33. **OPEN-RESPONSE QUESTION** | 4 marks |

a) The equation below is made of 2 binomials. Solve and verify the equation.

$$6x - 3 = 3x - 9$$

Solve	Verify
$6x - 3 = 3x - 9$	$6(-2) - 3 = 3(-2) - 9$
$6x = 3x - 6$	$-12 - 3 = -6 - 9$
$3x = -6$	$-15 = -15$
$x = -2$	

b) • **Create an equation different from the one in a), but that has the same solution. Use two different binomials for your equation.**

	=	
binomial		**binomial**

• **Verify your response.**

Sample responses:

	OR	
$12x - 6 = 6x - 18$		$8x + 7 = 5x + 1$
$12x = 6x - 12$		$3x + 7 = 1$
$6x = -12$		$3x = -6$
$x = -2$		$x = -2$

Scoring Rubric

	Score and General Performance Indicators	Specific Performance Indicators/Criteria
Level 1 limited understanding	**1** **weak attempt**	- any 1 criterion met
Level 2 good understanding	**2** **reasonable strategy, minor errors and/or omissions**	- any 2 criteria met
	3 **response complete with one minor error or omission**	- any 3 criteria met
Level 3 exceptional understanding	**4** **response complete, correct, showing insightful thinking, critical thinking, or a generalization**	- all 4 criteria met

Criteria:
1. correct solution for the equation in a)
2. correct verification for the equation in a)
3. correct equation in b)
4. correct verification in b) for equation given

EXEMPLARS

33. **OPEN-RESPONSE QUESTION**

a) The equation below is made of 2 binomials.
Solve and verify the equation.

$$6x - 3 = 3x - 9$$

Solve

$6x - 3x = -9 + 3$

$\frac{3x}{3} = \frac{-6}{3}$

$1x = -2$

Verify

$6(-2) - 3 = 3(-2) - 9$

$-12 - 3 = -6 - 9$

$-15 = -15$

b) • Create an equation different from the one in a), but that has the same solution.
Use two different binomials for your equation.

$5x - 5$	=	$7x - 1$
binomial		binomial

• Verify your response.

$5x - 5 = 7x - 1$

$5(-2) - 5 = 7(-2) - 1$

$-10 - 5 = -14 - 1$

$-15 = -15$

4 marks
- all criteria met

4 marks

33. **OPEN-RESPONSE QUESTION**

a) The equation below is made of 2 binomials.
Solve and verify the equation.

$$6x - 3 = 3x - 9$$

Solve

$-3x \quad -3x$

$3x - 3 + 3 = -9 + 3$

$3x = -6$

$x = -2$

Verify

$6(-2) - 3 = 3(-2) - 9$

$-12 - 3 = -6 - 9$

$-15 = -15$

b) • Create an equation different from the one in a), but that has the same solution.
Use two different binomials for your equation.

$8x + 4$	=	-12
binomial		binomial

• Verify your response.

$\quad -4 \quad -4$

$8x + 4 = -12$

$8x = 8$

$x = 1$

2 marks
• criteria 1 and 2 met

4 marks

Question No. 34

Specific Outcome: H.12 (RR)

♦ Question

2 marks

The planet Earth is about 1.5×10^8 kilometres from the sun.

The planet Pluto is about 5 900 000 000 kilometres from the sun.

- By how many kilometres is Earth closer to the sun than Pluto? Show your work.
- Express your answer in scientific notation.

♦ Answer Key

$5.9 \times 10^9 - 1.5 \times 10^8$

$= 5.75 \times 10^9$ km

Earth is 5.75×10^9 km closer ***OR*** 5.8×10^9 km closer

Marking Key

2 marks:

- 1 mark for correct strategy
- 1 mark for correct answer expressed in scientific notation

Marker note(s):

- *5.75^9 is not acceptable scientific notation*
- *award a maximum of 1 mark for the following solution:*

$$\frac{5.9 \times 10^9}{1.5 \times 10^8} = 39.3$$

$$= 3.9 \times 10^1$$

OR

$$\frac{5.9 \times 10^9}{1.5 \times 10^8} = 3.93 \times 10^1$$

Question No. 35

Specific Outcome: H.9 (RR/E)

♦ Question

2 marks

- What value must replace the x to make the equation true?

$$\frac{2^8}{2^x} = 32$$

$x =$ _____

- Justify your answer.

♦ Answer Key

- $x = 3$

- $32 = 2^5$

So $\frac{2^8}{2^x} = 2^5$

$8 - x = 5$

$x = 3$

OR

$8 - 3 = 5$

$2^5 = 32$

Marking Key

2 marks:

- 1 mark for correct answer
- 1 mark for correct justification

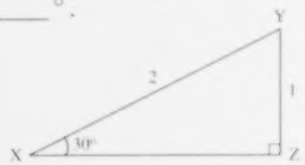
Question No. 36

Specific Outcomes: 1.1, 1.2 and 1.3 (RR)

♦ Question

3 marks

a) Using the diagram below, complete the following statement:
$\sin 30° = \cos$ _____ °.



b) Calculate the length of $\overline{XZ}$ using 2 different methods. Show your work.

A | **B**

♦ Answer Key

a) $\sin 30° = \cos 60°$ ***OR*** $\cos Y$

Sample solutions (other strategies possible):

b) $2^2 - 1^2 = \left(\overline{XZ}\right)^2$

$3 = \left(\overline{XZ}\right)^2$

$1.7321 = \overline{XZ}$

OR

$\cos 30° = \dfrac{\overline{XZ}}{2}$

$\overline{XZ} = 1.7321$

OR

$\tan 30° = \dfrac{1}{\overline{XZ}}$

$\overline{XZ} = 1.7321$

Marking Key

3 marks:

- 1 mark for correct answer in a)
- 1 mark for one correct strategy and answer in b)
- 1 mark for another correct strategy and answer in b)

Marker note(s):

- *award 1 mark in b) if strategies are correct (correct equations) but the answers are incorrect*

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Question No. 37

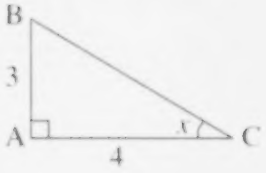
Specific Outcomes: F.2 and I.2 (OR)

QUESTION AND ANSWER KEY

37. **OPEN-RESPONSE QUESTION** | 4 marks |

ΔABC and ΔDEF are both right triangles.

Note: diagrams are not drawn to scale.



a) Given $\overline{AB} = 3$ and $\overline{AC} = 4$, calculate the measure of $\angle ACB$ (x) to the nearest degree.

$$\tan x = \frac{3}{4}$$

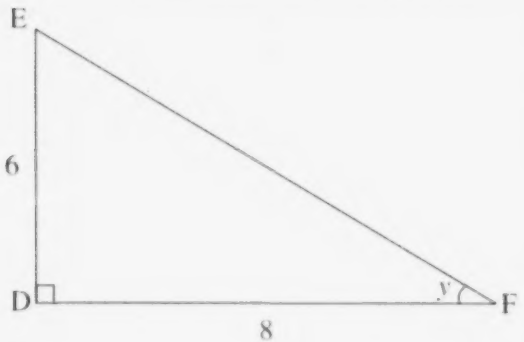
$$\tan^{-1}\left(\frac{3}{4}\right) = 37°$$

b) If $\angle x = \angle y$, explain why ΔABC is similar to ΔDEF.

$\angle A = \angle D$
$\angle x = \angle y$

$\Delta ABC \sim \Delta DEF$ because 2 pairs of corresponding angles are congruent.

c)
- **Create measurements for the sides of ΔDEF so that ΔABC is similar to ΔDEF.**
- **Use the ratios of the sides to prove that these two triangles are similar.**



Side measures must reflect scale factor.

for example:

$\frac{3}{6} = \frac{4}{8} = \frac{1}{2}$ (third side could be mentioned)

OR

$$\frac{AB}{DE} = \frac{AC}{DF}$$

$\therefore$ Sides are proportionate and therefore the triangles are similar.

Scoring Rubric

	Score and General Performance Indicators	Specific Performance Indicators/Criteria
Level 1 limited understanding	**1 weak attempt**	- any 1 criterion met
Level 2 good understanding	**2 reasonable strategy, minor errors and/or omissions**	- any 2 criteria met
	3 response complete with one minor error or omission	- any 3 criteria met
Level 3 exceptional understanding	**4 response complete, correct, showing insightful thinking, critical thinking, or a generalization**	- all 4 criteria met

Criteria:

1. correct calculation of $\angle x$ in a)

2. two pairs or three pairs of corresponding angles are congruent (AA, AAA is sufficient)

3. two appropriate side measures for ΔDEF (third side not necessary, given right angle)

4. all three sides are proportionate to each other (we will accept two sides because of the right angles)

Marker note(s):

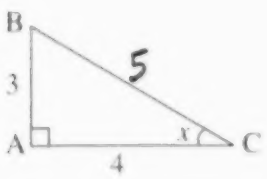
- *criterion 4 could be a statement of proportions* $\left(\frac{AB}{DE} = \frac{AC}{DF} = \frac{BC}{EF}\right)$
- *student's agreement that $\angle x = \angle y$ may be inferred from the work shown if not explicitly stated*

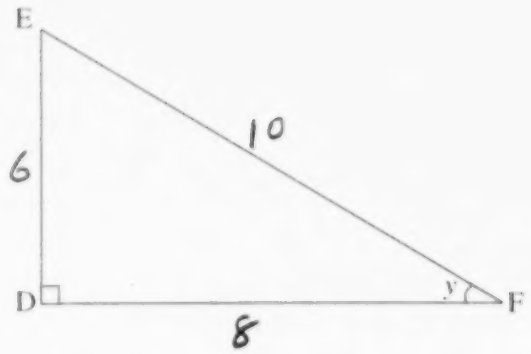
EXEMPLARS

37. **OPEN-RESPONSE QUESTION**

ΔABC and ΔDEF are both right triangles.

Note: diagrams are not drawn to scale.





a) Given $\overline{AB} = 3$ and $\overline{AC} = 4$, calculate the measure of $\angle ACB$ (x) to the nearest degree.

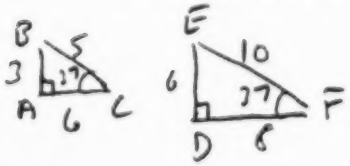
$\tan \angle x = \frac{3}{4}$

$\angle x = 37°$

b) If $\angle x = \angle y$, explain why ΔABC is similar to ΔDEF.

They are similar because they have 2 angles that are the same - 90° and 37°

c)
- Create measurements for the sides of ΔDEF so that ΔABC is similar to ΔDEF.
- Use the ratios of the sides to prove that these two triangles are similar.



$\tan \angle F \frac{6}{8}$ $\tan \angle C = \frac{3}{4}$

$\angle F = 37°$ $\angle C = 37°$

$3 \times 2 = 6$
$4 \times 2 = 8$
$5 \times 2 = 10$

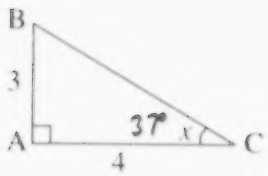
3 marks
- criteria 1, 2 and 3 met

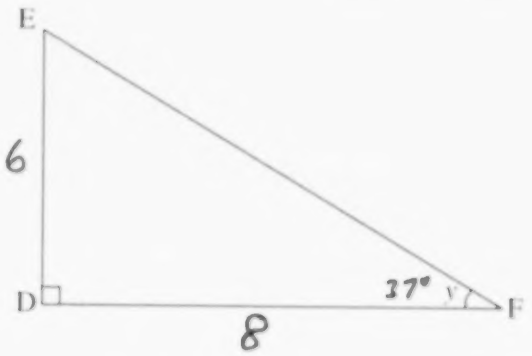
4 marks

37. **OPEN-RESPONSE QUESTION**

ΔABC and ΔDEF are both right triangles.

Note: diagrams are not drawn to scale.





a) Given $\overline{AB} = 3$ and $\overline{AC} = 4$, calculate the measure of $\angle ACB$ (x) to the nearest degree.

$\tan^{-1}\left(\frac{3}{4}\right) = 37^\circ$

b) If $\angle x = \angle y$, explain why ΔABC is similar to ΔDEF.

If angles are all the same in two triangles but the sides are different then they are similar

c)
- Create measurements for the sides of ΔDEF so that ΔABC is similar to ΔDEF.
- Use the ratios of the sides to prove that these two triangles are similar.

$\tan^{-1}\left(\frac{6}{8}\right) = 37^\circ$

2 marks
- criteria 1 and 2 met

4 marks

Question No. 38

Specific Outcome: J.4 (RR/E)

♦ Question

3 marks

A student's final mark is calculated by the following formula:
Final Mark = $0.7(\text{Term Mark}) + 0.3(\text{Exam Mark})$

a) If Erin's term mark is 80% and her exam mark is 66%, what is Erin's final mark?

b) Bart's term mark before the exam is 70%.
Final Mark = $0.7(\text{Term Mark}) + 0.3(\text{Exam Mark})$
- Is it possible for Bart to end up with a final mark 80% or higher?
- Justify your answer.

♦ Answer Key

a) Final Mark $= 0.7 \times 80 + 0.3 \times 66$

$= 75.8\%$ ***OR*** 76%

b) Possible strategy:

$$80 = 0.7 \times 70 + 0.3x$$
$$80 - 49 = 0.3x$$
$$31 = 0.3x$$
$$103.3 = x$$

Since it is not possible to get 103.5% on the exam, Bart cannot get 80% in the course.

Marking Key

3 marks:
- 1 mark for correct answer in a)
- 1 mark for correct strategy and answer in b)
- 1 mark for correct justification in b)

Marker note(s):
- *other strategies are possible in b)*
- *in b), saying "no" with no work shown is awarded 0 marks*

Question No. 39—Choice I only

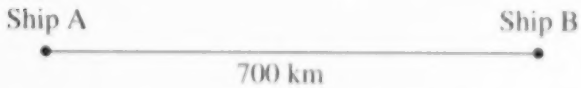
Specific Outcome: D.1 (RR/E)

♦ Question

3 marks

A sailboat on the ocean is in distress. The captain radios for help. Two ships hear the call for help. These ships are 700 km from each other. Ship A can receive radio transmissions from 500 km away. Ship B can receive radio transmissions from 300 km away.

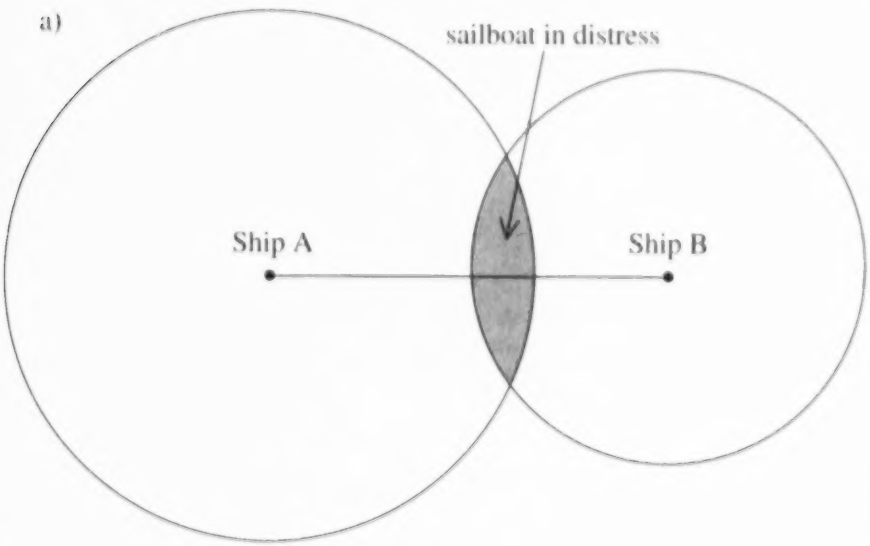
a)
- For Ship A, sketch the locus of points from which it can receive radio transmissions.
- For Ship B, sketch the locus of points from which it can receive radio transmissions.
- Shade the area where the sailboat could be located.



b) The sailboat drifts and soon cannot be heard by either ship. Describe or illustrate the locus of points where the sailboat could be.

♦ Answer Key

a)



b) The locus of points outside the circles.

Marking Key

3 marks:

- 1 mark for 2 correct loci in a)
- 1 mark for shaded area where the sailboat can be located in a)
- 1 mark for describing or illustrating where the sailboat can be located in b)

Marker note(s):

- *if circles do not overlap, award a maximum of 1 mark*
- *circles do not have to be to scale*
- *circles do not have to be dots in b)*

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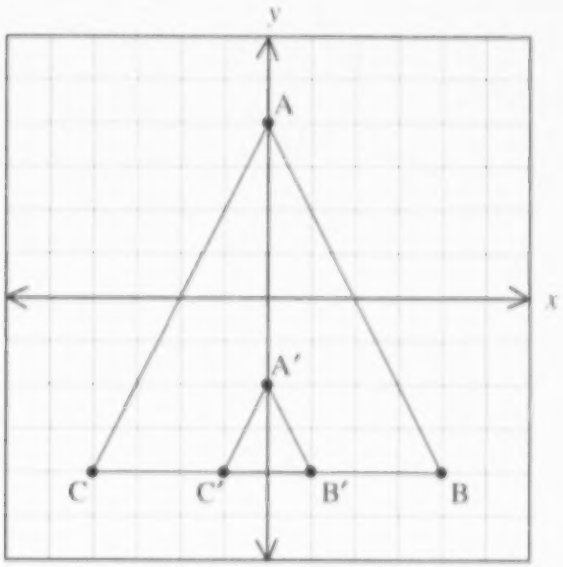
Question No. 39—Choice II only

Specific Outcomes: K.4, K.2 and J.4 (RR/E)

♦ **Question** 3 marks



a) Name the type of transformation made to ΔABC to produce the image $\Delta A'B'C'$.

b) How many times longer is $\overline{AC}$ than $\overline{A'C'}$?

c) Calculate the following ratio: area of ΔABC to area of $\Delta A'B'C'$.

♦ **Answer Key**

a) dilatation (reduction)

b) 4

c) 16:1 ***OR*** 32:2 , $\frac{16}{1}$ ***OR*** $\frac{32}{2}$ ***OR*** 16 times bigger

Marking Key

3 marks:

- 1 mark for correct transformation in a)
- 1 mark for correct scale factor in b)
- 1 mark for stating correct ratio in c)

Marker note(s):

- *reversing the ratio in c) is incorrect (e.g., 1:16)*

APPENDICES

Appendix A

SPECIFIC OUTCOME MATCH

Selected-Response Questions		
Question No.	**Unit(s)**	**Specific Outcome(s)**
1	A	1
2	A	1
3	A	1
4	B	1
5	B	4
6	B	2
7	C	6
8	C	6
9	E	2
10	G	3
11	H	1
12	H	2, 9
13	H	3
14	H	3
15	H	3, 6, 7
16	H	11
17	H	12
18	H	13
19	I	2
20	I	3, 4
Choice I		
21	D	1
22	D	1
23	D	3
24	D	2
25	D	3
Choice II		
21	K	3
22	K	1
23	K	2
24	K	2
25	K	3

Restricted-Response Questions			
Question No.	**Unit(s)**	**Specific Outcome(s)**	**Mark Value**
27	A	1	3
28	B	6	2
31	E	2	3
34	H	12	2
36	I	1, 2, 3	3
Restricted-Response with Explanation Questions			
Question No.	**Unit(s)**	**Specific Outcome(s)**	**Mark Value**
26	B	1	3
30	C	2	2
35	H	9	2
38	J	4	3
Choice I			
39	D	1	3
Choice II			
39	K/J	4, 2/4	3
Open-Response Questions			
Question No.	**Unit(s)**	**Specific Outcome(s)**	**Mark Value**
29	C	4, 8	6
32	G	3	4
33	E	2	4
37	F/I	2/2	4

Appendix B

DOUBLE MARKING RECORD SHEET

FIRST MARKING BOOKLET NO.

_____

Marker ID	Question	Score
	26	
	27	
	28	
	29	
	30	
	31	
	32	
	33	
	34	
	35	
	36	
	37	
	38	
	39	
	Total	

DOUBLE MARKING RECORD SHEET

SECOND MARKING BOOKLET NO.

_____

Marker ID	Question	Score
	26	
	27	
	28	
	29	
	30	
	31	
	32	
	33	
	34	
	35	
	36	
	37	
	38	
	39	
	Total	

Appendix C

GENERATING STUDENT PROFILES—CHOICE I

Profile of Test Score by Question Type

Question Type	Test Questions	Total	÷ Maximum	× 100	= %
Selected Response	1 to 25: __		25		
Restricted Response	27 __, 28 __, 31 __, 34 __, 36 __		13		
Restricted Response with Explanation	26 __, 30 __, 35 __, 38 __, 39 __		13		
Open Response	29 __, 32 __, 33 __, 37 __		18		
Example					
Open Response	29 4, 32 2, 33 1, 37 2	9	18	05	50%

Profile of Test Score by Curricular Strand

Strand	Test Questions	Total	÷ Maximum	× 100	= %
Shape and Space	19 to 25: __ 36 __, 37 __, 39 __		17		
Number	7 to 9, 11 to 18: __ 29 __, 30 __, 31 __, 33 __, 34 __, 35 __, 38 __		33		
Statistics and Probability	4 to 6, 10: __ 26 __, 28 __, 32 __		13		
Patterns and Relations	1 to 3: __ 27 __		6		

Appendix D

GENERATING STUDENT PROFILES—CHOICE II

Profile of Test Score by Question Type

Question Type	Test Questions	Total	÷ Maximum	× 100	= %
Selected Response	1 to 25: __		25		
Restricted Response	27 __, 28 __, 31 __, 34 __, 36 __		13		
Restricted Response with Explanation	26 __, 30 __, 35 __, 38 __, 39 __		13		
Open Response	29 __, 32 __, 33 __, 37 __		18		
Example					
Open Response	29 4, 32 2, 33 1, 37 2	9	18	05	50%

Profile of Test Score by Curricular Strand

Strand	Test Questions	Total	÷ Maximum	× 100	= %
Shape and Space	19 to 25: __ 36 __, 37 __, 39 __		17		
Number	7 to 9, 11 to 18: __ 29 __, 30 __, 31 __, 33 __, 34 __, 35 __, 38 __		33		
Statistics and Probability	4 to 6, 10: __ 26 __, 28 __, 32 __		13		
Patterns and Relations	1 to 3: __ 27 __		6		